AWIPS SOFTWARE INSTALLATION INSTRUCTION NOTE 44
(for Electronics Systems Analysts)
Maintenance, Logistics, and Acquisition Division
W/OPS12: JCS

SUBJECT	:	Maintenance Release OB2.2
PURPOSE	:	To provide installation instructions for Maintenance Release OB2.2
AFFECTED SITES	:	All AWIPS sites must install this maintenance release.
PREINSTALLATION REQUIREMENTS	:	AWIPS Software Maintenance Release OB2.1 must be installed.
AUTHORIZATION	:	The authority for this modification note is Request for Change AB729. MROB2_SEC_A100440
SECURITY LEVEL	:	root
ESTIMATED TIME REQUIRED	:	Approximately 10-15 minutes for the maintenance release, 20 to 30 minutes for the execution of localization, and 30 to 60 minutes for the execution of "push" script; based on number of workstations.
EFFECT ON OTHER INSTRUCTIONS	:	File this note in EHB-13, Series II, section 3.1. Discard all previous software installation instructions, prior to Build OB1 (AWIPS Software Installation Instruction Note 37) in section 3.1.
VERIFICATION STATEMENT	:	The Maintenance Release OB2.2 installation procedures were tested and verified at NMTW (Silver Spring, MD), BIS (Bismark WFO, ND), GYX (Portland WFO, ME), PBP (Pacific Region HQR), PDT (Pendleton WFO, OR), REV (Reno WFO, NV), RNK (Roanoke WFO, VA), SHV (Shreveport, LA), and SJT (San Angelo, TX)
TECHNICAL SUPPORT	:	For questions or problems regarding these installation instructions or installing this release, please contact the NCF at 301-713-9344.

GENERAL:

A. MROB2.2 Patch Summary

1. Extraneous space character in product causes errors for HWR broadcast (DR# 12805 - MDL_A100414)
2. Extend Eta 12km surface and BL forecast times to 84 hrs (DR# 12870 - FSL_A100417)
3. Extend AVN CONUS scale forecast times to 168 hrs plus add new levels (DR# 12872 - FSL_A100418) *

4. WWA: Editable text window, no popup editors, allow word wrap (DR# 12983,13235 - MDL_A100419)
5. WFOA: Text Version is not working (DR# 13009 - SEC_A100420)
6. WWA: Text pushing to adjacent sites and update Status Struct (DR# 13024,13271 - MDL_A100421)
7. Local Warnings display of products lacking LAT/LON line hangs IGC (DR# 13037 - FSL_A100422)
8. LSR Patch (DR# 13085,13191,13276 - MDL_A100412)
9. Use correct header for Eastern North Pacific (ENP) model (DR# 13087 - FSL_A100423)
10 WarnGen follow-up capability for Western Region Flash Flood Warnings (DR# 13330 - FSL_A100427)
11 WFOA: Discontinuities in GOES Satellite Imagery Loops (DR# 13221 - NGIT_A100428)
12 LDAD Not Ingesting Incoming Products (DR# 13206 - SEC_A100429)
13 HWR: NWR product seg faults when station substitution occurs (DR# 13285 - MDL_A100430)
14 CLI: In display GUI, text fields too large for corresponding row (DR# 13208 - MDL_A100431)
15 IFPS forecast Verification data not getting into Verification Matrix (DR# 13212 - MDL_A100432)
16 AF: VIRtest could send incorrect alarms to the NCF (DR# 13228 - NGIT_A100424)
17 Need utility to monitor RAID on Linux CP (DR# 13229 - NGIT_A100425)
18 Linux OS changes required for ITO to work (DR# 13230 - NGIT_A100433)
19 Linux RiverPro crashes under certain product generation instructions (DR# 13247 - OHD_A100434)
20 ECMF grids are failing to decode (DR# 13246 - NGIT_A100435)
21 WWA memory leaks. Value could be corrupted when WWA uses 'wwamyPIL' (DR# 13253 - MDL_A100436)
22 SSH/SSL: CERT Advisory CA-2003-26 Compliance (DR# 13261 - NGIT_A100438)
23 Update acq_pattern for TPC hurricane model 54 and 66 hr only (DR# 13267 - FSL_A100439)
24 Problem displaying All Tilts when using Previous Run option (DR# 13295 - FSL_A100413)

ROB2.2 Detailed Description:

1   Extraneous space character in product causes errors for HWR broadcast (DR# 12805 - MDL_A100414)
    In the NWR products, an extra space character occurs before certain commas in the text. This causes an error in the HWR radio broadcast, since it will say the word "comma" every time these space characters are encountered in the text product.

2   Extend Eta 12km surface and BL forecast times to 84 hrs (DR# 12870 - FSL_A100417)
    Currently, the 12km Eta grids only go out thru 60 hour forecasts. The patch will allow for storage of forecast grids out to 84 hours. This involves adding new forecast times to the `eta218.cdl` and the `eta242.cdl` (Alaska). Additional 12km Eta grids will be available for forecast times 63, 66, 69, 72, 75, 78, 81, and +84 hours.

3   Extend AVN CONUS scale forecast times to 168 hrs plus add new levels (DR# 12872 -
    FSL_A100418) *
    -       Currently, the AVN 211 CONUS grids only go out thru 120 hour forecasts. The patch
            will allow for storage of forecast grids out to 168 hours. This involves adding new
            forecast times to the avn211.cdl. Additional AVN 211 grids will be available for
            forecast times 126, 132, 138, 144, 150, 156, 162, and 168 hours.
    -       Add several new upper air levels for existing parameters (Relative Humidity, Temp, U
            + V Wind   Components, + Height) to support GFE. Additional levels are at 80km
            Sfc, BL (0-30, 30-60, 60-90, 90-120, 150-180) 1000-500 x 25 mb, 500-100 x 50 mb (Z,
            T, u, v, RH).
    -       This is the initial step in the conversion from AVN/MRF models to the GFS model
    -       There will be a new '.cdl' for Alaska.

4   WWA: Editable text window, no popup editors, allow word wrap (DR# 12983,13235 -
    MDL_A100419)
    -       Based on field requests, the WWA transmit interface text widget needs to be made
            editable. This will allow forecasters a last view of the generated WWA product and
            also provides an opportunity to make any last minute changes before sending. Virtual
            segment popup editors and headline editors are no longer needed once the xmit
            interface text widget becomes editable. These features need to be removed from the
            operational interaction with WWA, but kept in the code for possible use later.
    -       When adding text to the WWA XMIT window, text should automatically word wrap. If
            the user does not manually add carriage returns to long lines of text, all text will not be
            visible when viewed from a text window.

5   WFOA: Text Version is not working (DR# 13009 - SEC_A100420)
    The text version on the fxatext database is not working correctly. Once the user has used
    the 'textdb -v' command to reduce the number of versions-to-keep for a given product in the
    database, a design flaw prevents the user from being able to increase the versions-to-keep
    value for that product in the future.

6   WWA: Text pushing to adjacent sites and update Status Struct (DR# 13024,13271 -
    MDL_A100421)
    -       Passing captured text to adjacent WFOs requires some prep work prior to the OB3
            release. This prep work will cover for intersite data passing between different builds
            such as OB2 and OB3.
    -       As part of the prep work, the WWA intersite functionality needs to be modified so that
            the function continues to work properly when adjacent sites are mixed between OB2
            and OB3.

7   Local Warnings display of products lacking LAT/LON line hangs IGC (DR# 13037 -
    FSL_A100422)
    -       The correction for this problem will be handled via a Post Installation Procedure.
    -       Several sites have reported problems with the Local Warnings display. In some
            cases, the IGC_Process hangs or crashes. Investigation and testing strongly suggest

that warnings lacking a LAT...LON line are the culprit. The only problem products seen at field sites are FFWs; those generated using WWA do not carry LAT...LON, while those from offices using WarnGen do carry LAT...LON, and display successfully. This problem occurs only on HP workstations. Based on limited testing, the presence or absence of a VTEC line seems to have no bearing on the issue. (See workaround in Part F of this document.)

8   LSR Patch (DR# 13085,13191,13276 - MDL_A100412)
   -   `LocalCitiesInfo.txt` file not being read. A bug was introduced into the LSR GUI which keeps the `localCities` file from being read. Corrected the stream being read to account for extra characters found in some national `Citiesinfo.txt` files. Used pre-existing `LSR_OCONUS_headers.txt` file for all WFOS (not just OCONUS) and added some error handling.
   -   LSR: Practice WMO headers are incorrect. A late requirement for a change in WMO headers emerged and needs to be handled in the LSR GUI (for practice mode) in OB2. LSR WMO headers will change in December 2003. Currently, the GUI uses NWUS30 for all CONUS LSR text products. According to the new directives, the number in that WMO header will be changing to a number in the 50s (52 to 56), depending on the site/region. The LSR GUI will be able to transmit LSR products without any problem, but if practice mode is used, the products will be stored to the database with the wrong WMO headers.
   -   Summary vs. Correction. A late requirement for the handling of a Summary LSR emerged and needs to be handled in the LSR GUI in OB2. The LSR Preview GUI must provided a summary option. The LSR text product must be able to be transmitted in 'summary' form. Currently, the 'correction' form is the only option that is available when an event has already been transmitted.

9   Use correct header for Eastern North Pacific (ENP) model (DR# 13087 - FSL_A100423)
    The WMO ID for the ENP grid in the 'acq_patterns.template' file is not correct. The third letter of the WMO ID should be 'Q' instead of 'P'.

10 WarnGen follow-up capability for Western Region Flash Flood Warnings (DR# 13330 - FSL_A100427)
    Implement a WarnGen follow_up capability for Western Region Flash Flood Warnings.

11 WFOA: Discontinuities in GOES Satellite Imagery Loops (DR# 13221 - NGIT_A100428)
    Since the 12 Aug 2003 convergence of the SBN's GOES East and West channels, the GOES satellite loops at some sites, and at certain D-2D scales, have become discontinuous ("jittery"). The more problematic scales are CONUS and North American. The problem is characterized by satellite loops that do not flow well (i.e., the cloud features appear to follow irregular trajectories). Some monitoring and analysis of this problem indicates that the problem has at least two causes:
    a)   subtle mapping differences between the CONUS sectors (i.e., TIGE and TIGW) and the SuperNational sectors (i.e., TIGN). In the new, converged SBN scenario, these two image sectors are often interleaved in CONUS-scale satellite views.

b)   Old/stale sensor data in sequential SuperNational sectors. This problem was only infrequently seen prior to the SBN convergence because each SBN channel only carried every alternate image. The workaround is to view the full resolution imagery on the more-local D-2D scales (e.g., Regional, states,or WFO), where the problem has not been detected.

This change updates the SBN CP `acqparms.sbn` filter files to remove problematic two-GOES composites (including SuperNational & Northern Hemisphere sectors). The change also filters CONUS sectors from the site's non-primary GOES spacecraft. The change substantially reduces a "jitteryness" problem with satellite loops at CONUS, North American, and Northern Hemisphere D-2D scales. Two files will be added to the baseline: `acqparms.sbn.east` and `acqparms.sbn.west`. The appropriate east or west file will be copied to `acqparms.sbn` based on the contents of the `/awips/fxa/data/localizationDataSets/<siteID>/whichSat.txt` file. Sites will receive only two sets of SuperNational and two sets of Northern Hemisphere sectors per hour rather than four sets of each. Sites will receive CONUS imagery only from their primary GOES (i.e., East or West), not both GOES spacecrafts.

12 LDAD Not Ingesting Incoming Products (DR# 13206 - SEC_A100429)
If there are more than 10 products in `/data/Incoming` on the LS, some will not be transferred to the DS. The products are erroneously moved to the `/data/ldad/Processed` directory without being processed. This situation occurs due to a restriction on the AWIPS Gauntlet firewall which does not allow more than 10 concurrent `rcp/remsh/rlogin` sessions. If the restriction of 10 concurrent `rcp/remsh/rlogin` sessions is reached when the listener process attempts to copy a product from LS1 to DS1, the listener process accurately recognizes the copy (rcp) failure. Unfortunately, the listener does not make any subsequent attempts to copy the failed product. The listener allows the product which had the one time copy (rcp) failure to be erroneously moved to the `/data/ldad/Processes` directory even though the product was not copied.

The correction is to limit the number of outstanding transfers managed by `newLDADdataNotification` to 10 and to make the listener retry three times to transfer a product.

13 HWR: NWR product seg faults when station substitution occurs (DR# 13285 - MDL_A100430)
When creating an NWR product, if no METAR is available for a station, the station substitution ability fails. NWR generates a segmentation fault and the product is not created.

14 CLI: In display GUI, text fields too large for corresponding row (DR# 13208 - MDL_A100431)
-       The correction for this problem will be handled via a Post Installation Procedure.
-       As a consequence of the conversion from HP-UX to Linux, the text fields in the "Display Daily Climate Values" GUI are too large for their corresponding rows. The last field (Average Wind Speed) does not appear in the interface, thus making it impossible for the user to edit it. (See workaround in Part F of this document.)

15 IFPS forecast Verification data not getting into Verification Matrix (DR# 13212 - MDL_A100432)
Data fails to be processed with IFPS15 and non-Multiple Domain Configuration. The Verification processing of new digital data stopped once IFPS15 was installed at sites that had not configured a Multiple Domain configuration. The verification software is being confused by a leading space in the value of the $IFPS_DOMAINS environment variable. In a multiple domain situation, a space is used to separate the two IDs.

16 AF: VIRtest could send incorrect alarms to the NCF (DR# 13228 - NGIT_A100424)
There have been several occasion in the field where the 'VIRtest' script sends incorrect alarms to the NCF concerning the VIR switches. This is caused by a failure of the 'cu' command when attempting to connect. This condition is transient and a subsequent retries are successful. The script is being updated to retry three times before reporting a problem.

17 Need utility to monitor RAID on Linux CP (DR# 13229 - NGIT_A100425)
Currently, there is not a way to monitor the RAID array on a Linux CP without rebooting the CP and entering the boot RAID utility. There is a need for a command line utility to monitor the RAID array and report problems to the NCF (via ITO) while the CP is operational. Such a tool has recently been released by Red Hat.

18 Linux OS changes required for ITO to work (DR# 13230 - NGIT_A100433)
As part of the Workstation Replacement activity, AWIPS will be transferring the ITO agents used to monitor workstations from the HP platforms to the Linux platforms. In order to allow the installation and maintenance of this tool, some Linux operating system changes are required.
The following files are being modified within the Linux baseline by this update:
a) `/etc/xinetd.d/rexec`
b) `/etc/ftpusers`
c) `/etc/snmp/snmpd.conf`

19 Linux RiverPro crashes under certain product generation instructions (DR# 13247 - OHD_A100434)

RiverPro crashes when creating a product on Linux. When using a quoted literal string for the format specifier, via the FORMATS: instruction, in the Tabular section, the formatter ignores the format instruction. The root cause of the crash has been identified as a string overflow that could occur under certain format instructions in the tabular section of the product generation instructions. This was observed at San Juan during the Workstation Replacement OAT.

20 ECMF grids are failing to decode (DR# 13246 - NGIT_A100435)

The ECMF Grids are failing to decode with the following errors from the GribDecoder log: "*...GribTableRoutines.C PROBLEM: Table `gribModelsECMF_ed1.txt` is empty...*". The file `gribModelsECMF_ed1.txt` is missing from `/awips/fxa/data` on the PXs. The file is no longer being released with the Linux baseline. In the future, this file will be released to all platforms.

21 WWA memory leaks. Value could be corrupted when WWA uses 'wwamyPIL' (DR# 13253 - MDL_A100436)

In the SetText function of transmit.C, the global variable 'wwamyPIL' is assigned a new PIL value to be used later. 'wwamyPIL' is set by using "wwamyPIL=var". This is fine in Object Oriented programming, but in this instance 'wwa' is a structure and myPIL is one of its elements which is declared as a char*. 'wwamyPIL' actually points to a local string. When the function returns, the memory that stores the PIL value could be collected by the OS and reallocate. Thus when WWA wants to use 'wwamyPIL', the value could be corrupted.

22 SSH/SSL: CERT Advisory CA-2003-26 Compliance (DR# 13261 - NGIT_A100438)
-    SSH must be patched to be compliant with CA-2003-26 and CA-2003-24. This patch will address recently discovered security vulnerabilities in SSH.
-    CERT Advisory CA-2003-26 (Multiple Vulnerabilities in SSL...) states that one of the reported SSL vulnerabilities could conceivably allow execution of malicious code. SSH uses at least one SSL library, so SSH may incorporate this vulnerability. This update contains the rebuilt SSH (patched for CA-2003-24) with the patched SSL library.

23 Update acq_pattern for TPC hurricane model 54 and 66 hr only (DR# 13267 - FSL_A100439)

The current `acq_patterns.txt` file on the PXs do not have the correct pattern to ingest this data. For CONUS only, the 54hr and 66hr forecast time for the TPC Hurricane Wind Model has the following WMO Headers:
    ZUMM98KNHC
    ZVMM98KNHC
    ZUMN98KNHC
    ZVMN98KNHC

24 Problem displaying All Tilts when using Previous Run option (DR# 13295 - FSL_A100413)
     When working with D2D, changing the option from "Valid Time Seq" to "Previous Run", and
     then loading any "All Tilts", disables stepping through the various elevation angles. D2D
     displays the highest tilt and will not allow you to go through the other elevations.

* The patch will be activated when the extended hours of AVN data is available.

B.   Pre-installation Guidelines

1.   ROB2.1 **must** be installed.

2.   Check http://www.ops1.nws.noaa.gov/awips_softwre.htm web page for the lessons
        learned document for this release.

3.   Logout of all the D2D sessions on BOTH HP workstations and Linux platforms.

4.   Logout of all the Text Workstations.

5.   The localization-related files on DS1 must be in "baseline condition" or else a corrupt
        localization will be propagated throughout.

This completes the pre-installation procedure.

C.   Maintenance Release Download and DS1 Installation Procedure

1.   At a workstation, open a telnet window and log into DS1 as `root` :

      rlogin ds1-<site> -l root

2.   Change to the `/data/local/ROB2.2` directory:

      cd /data/local/ROB2.2

3.   Create a script output log file:

      script -a ROB2.2.out

4.   Uncompress the release bundle:

      zcat ROB2.2.tar.Z | tar xvf -

5.   Run the installation script by typing:

      ./installROB2.2

6.   Stop the output script:

      ./stopscript

This completes the maintenance release download and DS1 installation procedure.

D.   Post Installation Configuration Checkout Procedure

Check the `.out` file for any files that may not have been removed or copied correctly.
(Check for the following: `cannot write: Text file busy`)
Type:

      grep busy ROB2.2.out
If any files were not removed correctly, delete them manually.

NOTE: 1.   Users can log back into their workstations at this time. Following the
localization steps, it is recommended that users log out of all sessions
again and back into their workstations. This will enable the latest
localization changes.

2.   Part E (Localization and Push Script Procedure) can be performed on
another day. The procedure takes 50 minutes to 90 minutes to complete.

This completes the maintenance release Post Installation procedure.

E.   Localization and Push Script Procedure

NOTE: 3.   Following the localization steps, users should log out of ALL sessions and
                          back into their workstation. This will enable the latest localization
                          changes.

                 4.   To enable the corrections for items #2, #3, #9, and #23, the following
                          steps need to be performed after the installation.

1. On DS1 as user `fxa`, execute the following "forced" localization:

```
rlogin ds1 -l root
su - fxa
cd /awips/fxa/data/localization/scripts
./mainScript.csh f -grids -auxFiles -dirs
exit
```

2. Upon successful localization, On DS1 as user `root`, execute the following "push" script.

```
rlogin ds1 -l root
cd /data/local/ROB2.2
script -a push_localization_ROB2.2.out
./push_localization_ROB2.2
./stopscript
exit
```

This completes the localization and push script procedures.

F. Workaround Procedure

1. Local Warnings display of products lacking LAT...LON line hangs/crashes IGC (DR_13037) - Item #7

    Just like the SVR and TOR templates, have the <COORDS> flag in your flash flood warning template for Warngen. Have it between the end of the call to action bullets and above the $. (If you have any questions on this workaround, contact Diane Deitz at (301) 713-9344)

2. CLI: In display GUI, text fields too large for their corresponding row (DR_13208) - Item #14

    Until this problem is fixed, the workaround (and this is only needed if the average wind speed needs to be changed) is to directly change the value in the database, using the utility program dbaccess. The SQL command for this is:

    `update daily_climate set avg_wind_speed = `*`xx.xx`*

    where station_id = *nnnnn* (as a numeric value)
    xx.xx is the average wind speed in mph.

    (For questions on this workaround, contact Gary Battel at (301) 713-0056 x194)

REPORTING INSTRUCTIONS

Report the completed software installation using the Engineering Management Reporting System (EMRS) according to the instructions in NWS Instruction 30-2104, Maintenance Documentation, Part 4, Appendix F. Include the following information on the EMRS Report:

Block #	Block Type	Information
5	Description	Install AWIPS Maintenance Release OB2.2 (patch bundle # MROB2_SEC_A100440)
7	Equipment Code	AWIPS
8	Serial Number	001
15	Comments	Installed Maintenance Release OB2.2 (patch bundle # MROB2_SEC_A100440) I.A.W. AWIPS Software Installation Instruction Note 44.
17a	Mod. No.	S44

A sample EMRS report is provided as attachment A.

Mark S. Paese
Director, Maintenance, Logistics, and Acquisition Division

Attachment A - EMRS Report Sample

Attachment A - Sample EMRS Report

New A26   Commit A26   Place on Hold   Copy A26   Delete A26   Detail Report   Document Summary   Help

GENERAL INFORMATION

NEW RECORD   WFO* BIS   Document No.* BIS31110001

1. Open Date	Open Time	2. Op Initials	3. Response Priority	4. Close Date	Close Time
11/10/2003	08:00	WSH	○ Immediate ○ Low ○ Routine ● Not Applicable	11/10/2003	11:00

5. **Maintenance Description**   428   characters left   AWIPS

Install AWIPS Maintenace Release OB2.2 (patch bundle #MROB2_SEC_A100440)

EQUIPMENT INFORMATION

6. Station ID*	7. Equipment Code	8. Serial Number	9. TM	10. AT	11. How Mal
BIS	AWIPS	001	M	M	999

Alert: Time Remaining:
                                        (For Block 12 use only)

13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING

ASN	Vendor Part No. (New Part)	Serial Number (Old Part)	Serial Number (New Part)	New Row
				Delete Row

14. WORKLOAD INFORMATION

a. Routine		b. Non-Routine		c. Travel		d. Misc		e. Overtime	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
						3	0		

MISCELLANEOUS INFORMATION

15. **Maintenance Comments**   622   characters left

Install AWIPS Maintenace Release OB2.2 (patch bundle #MROB2_SEC_A100440) I.A.W. AWIPS Software Installation Instruction Note 44.

16. Tech Initials
DED

17. SPECIAL PURPOSE REPORTING INFORMATION

a. Mod No.	b. Mod Act/Deact Date	c. Block C	d. Trouble Ticket No.	e. Block E
S44	11/10/2003			

Commit A26   Place on Hold   Copy A26   New A26   Cancel